WHAT IS CLAIMED IS:

1. A spray device comprising:

a body having a liquid discharge passage;

a spray nozzle assembly affixed to the body, the spray nozzle assembly including a liquid spray tip for directing liquid from the liquid passage in the body into a predetermined spray pattern and an atomizing fluid cap, the liquid spray tip including a forwardly extending nose portion that defines a liquid discharge orifice, the nose extending through a central opening in the air cap thereby defining an annular atomizing fluid discharge orifice that communicates with an atomizing fluid inlet, the nose extending in a downstream direction past the central opening in the air cap such that the liquid discharge orifice is arranged at least approximately 2 mm. downstream of the annular atomizing fluid discharge orifice.

2. The spray device according to claim 1 wherein the atomizing fluid cap includes a pair of opposed angled fan atomizing fluid passages each having a respective fan discharge orifice that is located upstream of the annular atomizing fluid discharge orifice and the liquid discharge orifice.

3. The spray device according to claim 2 wherein the atomizing fluid cap includes an end face having a pair of V-shaped cutouts therein on opposite sides of the atomizing fluid discharge orifice, each fan discharge orifice being arranged in an angled side of a respective one of the V-shaped cutouts so as to direct atomizing fluid towards the fluid discharging from the fluid discharge orifice.

4. The spray device according to claim 1 wherein the liquid discharge orifice is located downstream of the annular atomizing fluid discharge orifice a distance of at least approximately 1 mm. plus the diameter of the liquid discharge orifice.

5. The spray device according to claim 1 further including a valve needle supported in the body for movement between a retracted open position for permitting liquid discharge through the liquid spray tip and a closed position for preventing liquid discharge through the liquid spray tip.

6. A spray device comprising:

a body having a liquid discharge passage;

a spray nozzle assembly affixed to the body, the spray nozzle assembly including a liquid spray tip for directing liquid from the liquid passage in the body into a predetermined spray pattern and an atomizing fluid cap, the liquid spray tip including a forwardly extending

nose portion that defines a liquid discharge orifice, the nose extending through a central opening in the air cap thereby defining an annular atomizing fluid discharge orifice that communicates with an atomizing fluid inlet, the atomizing fluid cap including a pair of opposed angled fan atomizing fluid passages each having a respective fan discharge orifice that is located upstream of the annular atomizing fluid discharge orifice and the liquid discharge orifice.

7. The spray device according to claim 6 wherein the atomizing fluid cap includes an end face having a pair of V-shaped cutouts therein on opposite sides of the atomizing fluid discharge orifice, each fan discharge orifice being arranged in an angled side of a respective one of the V-shaped cutouts so as to direct atomizing fluid towards the fluid discharging from the fluid discharge orifice.

8. The spray device according to claim 6 further including a valve needle supported in the body for movement between a retracted open position for permitting liquid discharge through the liquid spray tip and a closed position for preventing liquid discharge through the liquid spray tip.

9. A spray device comprising:

a body having a liquid discharge passage;

a spray nozzle assembly affixed to the body, the spray nozzle assembly including a liquid spray tip for directing liquid from the liquid passage in the body into a predetermined spray pattern and an atomizing fluid cap, the liquid spray tip including a forwardly extending nose portion that defines a liquid discharge orifice, the nose extending through a central opening in the air cap thereby defining an annular atomizing fluid discharge orifice that communicates with an atomizing fluid inlet, the nose extending in a downstream direction past the central opening in the air cap such that the liquid discharge orifice is arranged a distance of at least approximately 1 mm. plus the diameter of the liquid discharge orifice downstream of the annular atomizing fluid discharge orifice, the atomizing fluid cap including a pair of opposed angled fan atomizing fluid passages each having a respective fan discharge orifice that is located upstream of the annular atomizing fluid discharge orifice and the liquid discharge orifice.

10. The spray device according to claim 9 further including a valve needle supported in the body for movement between a retracted open position for permitting liquid discharge through the liquid spray tip and a closed position for preventing liquid discharge through the liquid spray tip.